Amendments to the Claims

This listing of the claims will replace all prior versions and listings of the claims in this application.

Listing of the Claims

Please amend the claims as follows:

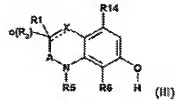
1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) A compound ~~of formula I according to claim 1 wherein said compound is s~~elected from the group consisting of:
   4,8-dimethyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride;
   8-ethyl-4-methyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride;
   4,8-dimethyl-3,8,9,10-tetrahydro-2H-1,6,11-trioxa-8,13-diaza-4-azonia-pentacen tetrafluoroborate;
   4,8-dimethyl-2,3,9,10-tetrahydro-4H-1,6-dioxa-11-thia-4,13-diaza-8-azonia-pentacen chloride; and
   8-(3-ethoxycarbonyl-propyl)-4-methyl-3,8,9,10-tetrahydro-2H-1,6,11-trioxa-8,13-diaza-4-azonia-pentacen chloride
   in free base form or acid addition salt form.

4. (Currently Amended) A composition comprising a compound according to claim 3~~of claim 1~~ and a pharmaceutically acceptable excipient or diluent.

5. (Currently Amended) A process for the production of a compound according to claim 3~~of formula I or a salt thereof~~, comprising the steps of reacting a phenol derivative of formula III



wherein the radicals and symbols A, X, R_1, R_2, R_5, R_6, R_{14} and o have the following meanings:

~~as defined in claim 1 for a compound of formula I,~~

p represents 0 or 1;

A represents $(CR_3R_4)_p$;

X represents CH, CH_2 or a divalent or trivalent heteroatom.;

o represents 0 or 1;

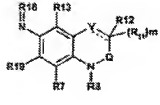
R_{17} represents hydrogen or (C_{1-4})alkyl;

R_5, R_{15} and R_{16} are independently of each other hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, $R_{17}OC(O)$-(C_{1-4})alkyl or (reactive group)-(C_{1-4})alkyl;

R_6 and R_{14} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylSO_2, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$; and

R_1 and R_2 denote independently of each other hydrogen, (C_{1-4})alkyl, carboxy, (C_{1-4})alkoxy carbonyl or (C_{1-4})alkoxy, or, when X is CH or CH_2 then R_1 and R_2 can also be OH or $NR_{15}R_{16}$;

with a nitroso or diazo compound of formula IV



wherein the radicals and symbols Q, Y, R_7, R_8, R_{11}, R_{12}, R_{13} and m have the following meanings:

~~as defined in claim 1 for a compound of formula I,~~

n represents 0 or 1;

Q represents $(CR_9R_{10})_n$;

Y represents CH, CH_2 or a divalent or trivalent heteroatom;

m represents 0 or 1;

R_{17} represents hydrogen or (C_{1-4})alkyl;

R_8, R_{15} and R_{16} are independently of each other hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, $R_{17}OC(O)$-(C_{1-4})alkyl or (reactive group)-(C_{1-4})alkyl;

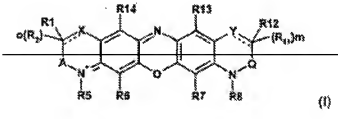
R_7 and R_{13} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylSO_2, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$;

R_{11} and R_{12} denote independently of each other hydrogen, (C_{1-4})alkyl, carboxy, (C_{1-4})alkoxy carbonyl or (C_{1-4})alkoxy, or, when Y is CH or CH_2 then R_{11}, R_{12} can also be OH or $NR_{15}R_{16}$; and

R_{18} represents oxo or p-nitrophenyl-N= and R_{19} represents hydroxy; and recovering the resulting compound ~~of formula I~~ in free base form or in form of an acid addition salt.

6. (Withdrawn – Currently Amended) A method of labeling target structures in the brain comprising:

(i) applying a composition comprising a compound according to claim 3 ~~of formula I~~



(I)

~~wherein X and Y represent CH, CH_2, or a divalent or trivalent heteroatom under the proviso that X and Y are not simultaneously CH or CH_2;~~

~~m and o represent independently of each other 0 or 1, with the proviso that~~

~~if m is 0 then the dotted line between Y and the neighboring C atom represents a bond and Y is CH or a trivalent heteroatom,~~

~~if m is 1 then the dotted line between Y and the neighboring C atom is absent and Y is CH_2 or a divalent heteroatom,~~

~~if o is 0 then the dotted line between X and the neighboring C atom represents a bond and X is CH or a trivalent heteroatom,~~

~~if o is 1 then the dotted line between X and the neighboring C atom is absent and X is CH_2 or a divalent heteroatom;~~

~~A represents $(CR_3R_4)_p$ and Q represents $(CR_9R_{10})_n$;~~

~~n and p represent independently of each other 0 or 1;~~

~~R_6, R_7, R_{13} and R_{14} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylsulfonyl, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$;~~

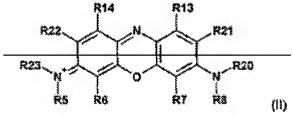
~~R_1, R_2, R_3, R_4, R_9, R_{10}, R_{11} and R_{12} denote independently of each other hydrogen, (C_{1-4})alkyl, carboxy, (C_{1-4})alkoxy carbonyl or (C_{1-4})alkoxy, or, when X is CH or CH_2 then R_1 and R_2 can also be OH or $NR_{15}R_{16}$, or when Y is CH or CH_2 then R_{11}, R_{12} can also be OH or $NR_{15}R_{16}$;~~

~~R_5, R_8, R_{15} and R_{16} are independently of each other hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, $R_{17}OC(O)-(C_{1-4})$alkyl or (reactive group)-(C_{1-4})alkyl; and~~

~~R_{17} represents hydrogen or (C_{1-4})alkyl;~~

~~in free base or acid addition salt form, or~~

~~of formula II~~



(II)

~~wherein~~

~~R_6, R_7, R_{13} and R_{14} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylsulfonyl, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$, and~~

~~R_{21} and R_{22} are hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, phenyl, phenylalkyl, carboxy or halogen;~~

~~R_{14} and R_{22} together with the carbon atoms to which they are attached can also form a saturated or unsaturated ring;~~

~~R_{21} and R_{13} together with the carbon atoms to which they are attached can also form a saturated or unsaturated ring;~~

~~R_5, R_8, R_{20} and R_{23} are hydrogen, (C_{1-4})alkyl, (C1-4)alkoxy, polyoxyhydrocarbyl, phenyl, phenylalkyl;~~

~~R_8 and R_{20} together with the nitrogen atom to which they are attached can form a saturated or unsaturated ring,~~

~~R_{21} and R_5 together with the nitrogen atom to which they are attached can form a saturated or unsaturated ring,~~

~~R_{22} and R_{23} together with the atoms to which they are attached can form a saturated or unsaturated ring,~~

~~R_5 together with R_6 together with the atoms to which they are attached can form a saturated or unsaturated ring,~~

~~R_2 together with R_8 together with the atoms to which they are attached can form a saturated or unsaturated ring,~~

~~R_{26} together with R_{24} together with the atoms to which they are attached can form a saturated or unsaturated ring,~~

(ii) allowing sufficient time for said compound to be chemically associated with the target structure in the brain, and

(iii) detecting said compound using near-infrared radiation.

7. (Withdrawn – Currently Amended) The method according to claim 6 wherein said target structures comprise [[are]] amyloid plaques.

8. (Withdrawn – Currently Amended) The method according to claim 7, further comprising [[for]] identifying diseases related to amyloid plaque generation and/or aggregation.

9. (Withdrawn – Currently Amended) The method according to claim 7, further comprising [[for]] identifying Alzheimer's disease.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Withdrawn – Currently Amended) A conjugate comprising a compound ~~of formula I~~ according to claim 3[[1]] covalently linked to a biomolecule through a reactive group.

14. (Withdrawn) A conjugate according to claim 13 wherein the biomolecule is selected from the group consisting of nucleoside, nucleotide, oligonucleotide, nucleic acid, protein, peptide, amino acid, polysaccharide, oligosaccharide, monosaccharide, drug or a small molecule having a molecular weight of less than 500.

15. (Withdrawn) A conjugate according to claim 13 capable of being detected using near-infrared radiation.

16. (New) A compound according to claim 3, wherein the compound is 4,8-dimethyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride.

17. (New) A compound according to claim 3, wherein the compound is 8-ethyl-4-methyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride.

18. (New) A compound according to claim 3, wherein the compound is 4,8-dimethyl-3,8,9,10-tetrahydro-2H-1,6,11-trioxa-8,13-diaza-4-azonia-pentacen tetrafluoroborate.

19. (New) A compound according to claim 3, wherein the compound is 4,8-dimethyl-2,3,9,10-tetrahydro-4H-1,6-dioxa-11-thia-4,13-diaza-8-azonia-pentacen chloride.

20. (New) A compound according to claim 3, wherein the compound is 8-(3-ethoxycarbonyl-propyl)-4-methyl-3,8,9,10-tetrahydro-2H-1,6,11-trioxa-8,13-diaza-4-azonia-pentacen chloride.